Tubacero
Ave. Guerrero
No. 3729 ote.
Col. Del Norte
Monterrey N.L. México
CP.64500
TEL:3068585
FAX:3068580

# CONSTANCIA DE INSPECCION

## INSPECTION CONSTANCY

No. CONSTANCIA (constancy No.): **110033**

CLIENTE(customer): PLESA ANÁHUAC Y CÍAS., S.A . DE C.V.

DIRECCION(address): AV. VALLE DE LAS ALAMEDAS # 66-O COL. SAN FCO. CHILPAN TULTITLÁN, EDO. DE MÉXICO. C.P. 54940

| O.T. (order no.) | DIAMETRO (outside diam.) | ESPESOR (thickness) | GRADO (grade) | ESPECIFICACION (specification) | PROCESO (process) | PEDIDO (contract) | O. PREPARACION (preparation order) | PROVEEDOR (supplier) | FECHA (date) |
|---|---|---|---|---|---|---|---|---|---|
| 33489 | 12.750" | 0.406" | X42/5LB PSL1/A53B | API SPEC 5L 44TH ED./A.S.T.M. | HFW | 9807 | SB-009-2011 | TERNIUM | 25/01/2011 |

| TUBO (pipe) O SERIE (SERIAL) | COLADA (heat) | TYPE | LOC | PRUEBA DE TENSION(tensile test) UNIDADES (units) PSI (Y.S.) | ORIENTACION (orientation) 1 (T.S.) | TAMAÑO (size) 3 % EL. | Y.S/T.S. | BEND | HARDNESS | PRUEBA DE IMPACTO (impact test) -10 °C °F ORIENTACION (orientation) TAMAÑO (size) 1:1 ENERGY (lbs/ft) 1 | 2 | 3 | AVG | SHEAR AREA 1 | 2 | 3 | AVG | DWTT -10 SHEAR AREA 1 | 2 | AVG | GRAIN SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 6 | | 74000 | | | | | | | | | | | | | | | | |
| 309 | 0812860 | H | 7 | 48900 | 65500 | 41 | 0.74 | | | | | | | | | | | | | | |
| | | | 6 | | 72000 | | | | | | | | | | | | | | | | |
| 120 | 0812861 | H | 7 | 53600 | 67100 | 38 | 0.79 | | | | | | | | | | | | | | |
| | | | 6 | | 78300 | | | | | | | | | | | | | | | | |
| 129 | 0822877 | H | 7 | 50100 | 70900 | 37 | 0.70 | | | | | | | | | | | | | | |
| | | | 6 | | 75000 | | | | | | | | | | | | | | | | |
| 20 | 0842929 | H | 7 | 51200 | 67100 | 42 | 0.76 | | | | | | | | | | | | | | |
| | | | 6 | | 78000 | | | | | | | | | | | | | | | | |
| 108 | 0812862 | H | 7 | 55300 | 69400 | 42 | 0.79 | | | | | | | | | | | | | | |
| | | | 6 | | 76300 | | | | | | | | | | | | | | | | |
| 254 | 0812864 | H | 7 | 57600 | 70500 | 40 | 0.81 | | | | | | | | | | | | | | |
| 150 | 0832928 | | 6 | | | | | | | | | | | | | | | | | | 9 |
| 179 | 0842929 | | 6 | | | | | | | | | | | | | | | | | | 9 |
| 340 | 0822877 | | 6 | | | | | | | | | | | | | | | | | | 9 |
| CRITERIOS DE ACEPTACION: (Acceptance criteria) | | | MIN: | 42100 | 60200 | 28 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | | | MAX: | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| | | | PROMEDIO (AVG.) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |

| TUBO (pipe) O SERIE (SERIAL) | TYPE | LOC | (%)ANALISIS QUIMICO / chemical analysis (%) C | Mn | P | S | Si | Al | Cu | Cr | Ni | Mo | Ti | Nb | B | V | N | Als | Ca | PCM | CE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | H | 7 | 0.18 | 0.69 | 0.011 | 0.002 | 0.184 | 0.034 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.0000 | 0.000 | - | - | - | - | - |
| 309 | P | 7 | 0.22 | 0.71 | 0.015 | 0.003 | 0.207 | 0.026 | 0.011 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0001 | 0.001 | - | - | 0.001 | 0.27 | 0.34 |
| | P | 7 | 0.22 | 0.70 | 0.015 | 0.003 | 0.210 | 0.026 | 0.009 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.0001 | 0.001 | - | - | 0.001 | 0.26 | 0.34 |
| | H | 7 | 0.19 | 0.68 | 0.011 | 0.003 | 0.185 | 0.042 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.0000 | 0.000 | - | - | - | - | - |
| 120 | P | 7 | 0.14 | 0.66 | 0.014 | 0.002 | 0.196 | 0.033 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0001 | 0.001 | - | - | 0.001 | 0.18 | 0.25 |
| | P | 7 | 0.17 | 0.67 | 0.015 | 0.002 | 0.190 | 0.034 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0002 | 0.001 | - | - | 0.001 | 0.22 | 0.28 |
| | H | 7 | 0.18 | 0.87 | 0.010 | 0.002 | 0.164 | 0.035 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - |
| 129 | P | 7 | 0.17 | 0.81 | 0.011 | 0.003 | 0.182 | 0.033 | 0.005 | 0.012 | 0.002 | 0.001 | 0.001 | 0.002 | 0.0001 | 0.001 | - | - | 0.001 | 0.22 | 0.31 |
| | P | 7 | 0.20 | 0.84 | 0.013 | 0.005 | 0.184 | 0.036 | 0.006 | 0.014 | 0.003 | 0.001 | 0.001 | 0.003 | 0.0001 | 0.001 | - | - | 0.001 | 0.25 | 0.34 |
| | H | 7 | 0.18 | 0.75 | 0.011 | 0.001 | 0.188 | 0.035 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - |
| 20 | P | 7 | 0.17 | 0.74 | 0.014 | 0.001 | 0.191 | 0.026 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0002 | 0.001 | - | - | 0.001 | 0.21 | 0.29 |
| | P | 7 | 0.16 | 0.73 | 0.014 | 0.001 | 0.189 | 0.024 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0002 | 0.001 | - | - | 0.001 | 0.21 | 0.28 |
| | H | 7 | 0.20 | 0.71 | 0.010 | 0.002 | 0.188 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - |
| 108 | P | 7 | 0.23 | 0.71 | 0.014 | 0.001 | 0.185 | 0.020 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0002 | 0.001 | - | - | 0.001 | 0.28 | 0.35 |
| | P | 7 | 0.23 | 0.71 | 0.014 | 0.001 | 0.185 | 0.019 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.0001 | 0.001 | - | - | 0.001 | 0.28 | 0.35 |
| | H | 7 | 0.19 | 0.70 | 0.011 | 0.003 | 0.185 | 0.033 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | - | - | - | - | - |
| 254 | P | 7 | 0.24 | 0.69 | 0.014 | 0.002 | 0.185 | 0.023 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.0002 | 0.002 | - | - | 0.001 | 0.28 | 0.35 |
| | P | 7 | 0.23 | 0.71 | 0.013 | 0.002 | 0.195 | 0.025 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.0001 | 0.002 | - | - | 0.001 | 0.27 | 0.35 |
| CRITERIOS DE ACEPTACION: (Acceptance criteria) MIN: | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MAX: | | | 0.26 | 1.20 | 0.030 | 0.030 | - | - | 0.500 | 0.400 | 0.400 | 0.150 | 0.040 | - | - | 0.080 | - | - | - | - | - |
| PROMEDIO (AVG.) | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

PRUEBA HIDROSTATICA: (hidrostatic test) PRESION: (pressure) 2280 Psi TIEMPO: (time) 10 sec

ULTRASONIDO(U.T.): (ultrasonic) STANDARD DE REFERENCIA: REFERENCE STANDARD J

RAYOS-X (RT): (x-ray) PENETROMETRO (penetrometer): N/A

NORMALIZADO DE SOLDADURA: (heat treatment weld) TEMPERATURA (temperature): 1600° F MIN (NO UNTEMPERED MARTENSITE REMAINS)

ESTANDAR DE REFERENCIA (REFERENCE STANDARD) F: U.T. DRILLED HOLE 1/16", G: U.T. DRILLED HOLE 1/8", I: U.T. NOTCH N-5, J: U.T. NOTCH N-10 L: RT HOLE 1/16", N: RT HOLE 2-2T O: RT HOLE 2-4T
Barreno (Drilled Hole)=H Muesca (Notch)=N

ORIENTACION(orientation):
1. TRANSVERSAL (transverse)
2. LONGITUDINAL (longitudinal)

TAMAÑO (size)
3.RECTANGULAR(rectangular)
4.CILINDRICA(round bar) 0.500"
5.CILINDRICA(round bar) 0.350"

LOCALIZACION (location)
6. SOLDADURA (weld)
7. METAL BASE (base metal)
8. ZONA AFECTADA (h.a.z.)
9. LINEA DE FUSION (fusion line)

TIPO DE PRUEBA (type)
H: COLADA (heat)
P: PRODUCTO (product)
R: REMUESTREO (recheck)
T: UNIDAD DE PRUEBA (Test unit)

HACEMOS CONSTAR QUE EL MATERIAL DESCRITO HA SIDO FABRICADO, MUESTREADO, PROBADO E INSPECCIONADO DE ACUERDO CON LA ESPECIFICACION MENCIONADA, Y QUE LOS RESULTADOS SON COMO APARECEN EN LOS REGISTROS DE LA COMPAÑIA.
(WE HEREBY VERIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE SPECIFICATION MENTIONED AND THAT THESE TEST RESULT ARE AS THEY APPEAR IN RECORDS OF THE COMPANY.)

CONTROL DE CALIDAD
TUBACERO, S. DE R.L. DE C.V.
04

Control de Calidad (Quality Control)
Ing. Samuel Montoya Laguna.